

Serial No. 09/973,477

ELG Docket No. LOU01-001-US

AMENDMENTS TO THE CLAIMS

In accordance with Rule 1.121, a complete claim listing is presented below, including appropriate status identifiers. Changes in the amended claims are shown by strikethrough for deleted material, and by underlining for added material.

1. (Currently Amended) A hypodermic needle, comprising:
a hollow tube having an outer surface extending in a straight line to a piercing tip, an interior surface defining a straight bore, and an angled end angled with respect to a longitudinal axis of the tube, the end having an opening and defining the piercing tip, the opening surrounded by an external peripheral rim, a front half region proximal to a the piercing tip ~~defined by the angled end~~, and a rear half region ~~opposite~~ proximal to the front half region;

wherein at least a portion of the external peripheral rim is beveled back at least 25% with respect to a wall thickness of the tube to form an internal beveled surface such that the internal beveled surface surrounds 20-70% of the opening and at least a portion of the internal beveled surface is in the rear half region; and

wherein the internal beveled surface is beveled from the outer surface to the interior surface in a direction towards the bore and away from the piercing tip.

2. (Previously presented) The hypodermic needle of claim 1, where at least a portion of the external peripheral rim is beveled back at least 30%.
3. (Previously presented) The hypodermic needle of claim 1, where at least a portion of the external peripheral rim is beveled back at least 35%.
4. (Previously presented) The hypodermic needle of claim 1, where at least a portion of the external peripheral rim is beveled back at least 40%.

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5. (Previously presented) The hypodermic needle of claim 1, where at least a portion of the external peripheral rim is beveled back at least 50%.

6. (Original) The hypodermic needle of claim 1, wherein the internal beveled surface is curved.

7. (Previously presented) The hypodermic needle of claim 6, wherein a circle coincident with the curvature of the internal beveled surface has a radius of curvature that is at least 25% with respect to the wall thickness.

8-9. (Cancelled)

10. (Currently Amended) A hypodermic needle, comprising:

a hollow tube having an outer surface extending in a straight line to a piercing tip, an interior surface defining a straight bore, and an angled end angled with respect to a longitudinal axis of the tube, the end defining the piercing tip, and the end having a front half region proximal to a the piercing tip defined by the angled end, and a rear half region opposite proximal to the front half region,

the end having a means for reducing fluid stress at an entrance of the needle, the means for reducing fluid stress comprising an opening surrounded by an external peripheral rim wherein at least a portion of the external peripheral rim is beveled back at least 25% with respect to a wall thickness of the tube to form an internal beveled surface such that the internal beveled surface surrounds 20-70% of the opening and at least a portion of the internal beveled surface is in the rear half region; and

wherein the internal beveled surface is beveled from the outer surface to the interior surface in a direction towards the bore and away from the cutting point piercing tip.

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11. (Currently Amended) In a hypodermic needle having an internal substantially cylindrical surface defining a straight bore; an external substantially cylindrical surface extending in a straight line to a piercing tip; an end angled with respect to a longitudinal axis of the needle, the end having an opening and defining a the piercing tip; an outer peripheral rim, the rim partially surrounding a first region of the opening proximal to the piercing tip and connecting the external and internal cylindrical surfaces of the needle; the improvement comprising;

an internal beveled surface on the internal surface of the needle surrounding 20-70% of a second region of said opening opposite proximal to the first region, wherein the degree of beveling back of the rim is at least 25% with respect to a wall thickness of the hypodermic needle; and wherein the internal beveled surface is beveled from the external substantially cylindrical surface to the internal substantially cylindrical surface in a direction towards the bore and away from the piercing tip.

12. (Previously presented) The hypodermic needle of claim 11, wherein at least a portion of the external peripheral rim is beveled back at least 30%.

13. (Previously presented) The hypodermic needle of claim 11, wherein at least a portion of the external peripheral rim is beveled back at least 50%.

14. (Original) A method of preparing a sample, comprising withdrawing blood with the hypodermic needle of claim 1.

15. (Currently Amended) In a method of preparing a sample, comprising: withdrawing blood with a hypodermic needle, the hypodermic needle having an internal substantially cylindrical surface defining a straight bore; an external substantially cylindrical surface extending in a straight line to a piercing tip; an end angled with respect to a longitudinal axis of the needle, the end

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having an opening and defining a the piercing tip; an outer peripheral rim, the rim partially surrounding a first region of the opening proximal to the piercing tip and connecting the external and internal cylindrical surfaces of the needle; the improvement comprising;

withdrawing blood with the hypodermic needle having an internal beveled surface on the internal surface of the hypodermic needle surrounding 20-70% of a second region of said opening opposite proximal to the first region, wherein the degree of beveling back of the rim is at least 25% with respect to a wall thickness of the hypodermic; and wherein the internal beveled surface is beveled from the external substantially cylindrical surface towards the internal substantially cylindrical surface in a direction towards the bore and away from the piercing tip.

16. (Currently Amended) A method of making a hypodermic needle, comprising:

beveling back an external peripheral rim of the hypodermic needle, where the hypodermic needle comprises:

a hollow tube having an outer surface extending to a piercing tip, an interior surface defining a bore, and an angled end angled with respect to a longitudinal axis of the tube, the end having an opening and defining the piercing tip, the opening surrounded by an external peripheral rim, a front half region proximal to a the piercing tip defined by the angled end, and a rear half region opposite proximal to the front half region;

where at least a portion of the external peripheral rim is beveled back at least 25% with respect to a wall thickness of the tube to form an internal beveled surface such that the internal beveled surface surrounds 20-70% of the opening and at least a portion of the internal beveled surface is in the rear half region; and

where the internal beveled surface is beveled from the outer surface to the interior surface in a direction towards the bore and away from the piercing tip.

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17. (Currently Amended) The method of making the hypodermic needle of claim 16, where the beveling comprises beveling back at least a portion of the external peripheral rim is ~~beveled back~~ at least 30% with respect to the wall thickness.
18. (Currently Amended) The method of making the hypodermic needle of claim 16, where the beveling comprises beveling back at least a portion of the external peripheral rim is ~~beveled back~~ 35% with respect to the wall thickness.
19. (Previously presented) The method of making the hypodermic needle of claim 16, where a circle coincident with the curvature of the internal beveled surface has a radius of curvature that is at least 25% with respect to the wall thickness.
20. (Previously presented) The method of making the hypodermic needle of claim 16, where the internal beveled surface surrounds from 5 to 85% of the opening.
21. (Previously presented) The hypodermic needle of claim 1, where the internal beveled surface is straight.
22. (Previously presented) The hypodermic needle of claim 21, where a reduction of red blood cell hemolysis during blood collection is provided in comparison to a conventional hypodermic needle.
23. (Previously presented) The hypodermic needle of claim 11, where the internal beveled surface is straight.
24. (Previously presented) The hypodermic needle of claim 23, where a reduction of red blood cell hemolysis during blood collection is provided in comparison to a conventional hypodermic needle.
25. (Previously presented) The hypodermic needle of claim 11, where the internal beveled surface is curved.